2. Data

The data for our empirical analyses come from a survey of South Carolina families who had been former food stamp recipients but who had not received TANF while on food stamps. The survey was conducted by Maximus, Inc. for the USDA and the South Carolina Department of Social Services (SC DSS). Details of the survey procedures are discussed in a report by Richardson et al. (2003), so we only briefly summarize the methodology here. Readers who are interested in more information about the survey along with a complete descriptive analysis of the data may wish to consult the earlier report.

As reported by Richardson et al. (2003), Maximus, Inc. conducted phone interviews with two cohorts of South Carolina families: one group that had left the Food Stamp Program during the fourth quarter of 1998 or first quarter of 1999 and another group that left the program during the fourth quarter of 1999 or first quarter of 2000. The interviews occurred approximately one year after the families left the program. For each cohort, 644 families were selected for interviews. The families all had children present when they were receiving food stamps, and none had received TANF at any time during the year before they had left food stamps. Families were equally stratified between one- and two-parent households. Of the 1,288 families that were selected for interviews, 899 (or 70 percent) completed interviews. There were no significant differences in completion rates between cohorts or between one- and two-parent households.

Material and subjective well-being measures. Different questionnaires were used depending on whether the families were receiving or not receiving food stamps at the time of the interview. The well-being outcomes that are the focus of our study—food hardships, other adverse events, and subjective assessments of life changes—were only asked of families who were off food stamps. Slightly more than three-quarters of the responding families were not receiving food stamps and thus asked the questions. The different design issues lead to a selective sample that consists of non-TANF, food stamp leavers who were off the Food Stamp Program a year later and reachable by phone. It is important to keep this selection in mind when interpreting the results.

The survey asked multiple questions about each category of well-being. We discuss the categories and the associated items below. Some of our multivariate statistical analyses work directly with the individual items. However, our descriptive analyses and some of our other multivariate analyses work with summary measures built from the individual items. Because of this, we also discuss how the summary measures are constructed.

Food insecurity. For the food insecurity questions, respondents were asked to think about their "food situation" over the previous two years. They were then asked whether or how often any of the following happened:

This study was conducted by The George Washington University and the South Carolina Department of Social Services under a cooperative agreement with the Economic Research Service. The views expressed are those of the authors and not necessarily those of ERS or USDA.

Q1: The food that I bought just didn't last, and I didn't have money to get more.

Q2: I couldn't afford to eat balanced meals.

Q3: Did you ever cut the size of meals or skip meals because there wasn't enough money?

Q4: (If Q3 occurred in last year): How often did you cut the size of meals or skip meals in the past year?

Q5: Did you ever eat less than you should because there wasn't enough money to buy food?

Q6: Were you ever hungry but didn't eat because you couldn't afford food?

For all of the questions except for Q4, subjects could respond that the conditions did or did not occur. If a particular condition did occur, the subjects were then asked whether it happened in the last 12 months, before the last 12 months or during both time periods. For each of these questions, we create a binary (dummy) variable that takes on a value of one if the person reported experiencing the problem in the last 12 months or in both time periods and takes on a value of zero otherwise. Question Q4, which was only asked of people who responded affirmatively to Q3, asked how frequently people cut the size of meals or skipped meals. For this question, we create a binary variable that equals one if the respondent indicated that this happened more frequently than "one or two months" a year.

Our primary multivariate analyses employ Multiple Indicator Multiple Cause specifications that combine and jointly model the individual responses to all six food hardship questions. However, in our descriptive analyses and in some preliminary multivariate analyses, we also consider two summary measures of food hardships. The first of these follows the methodology described by Nord et al. (1999) and uses the count of affirmative responses to the food hardship questions to form a food security scale. Specifically, people who indicated that they either experienced no hardships or only one type of hardship are classified as *food secure*, meaning that they had access "at all times to enough food for an active, healthy life" (Nord et al. 2002). People who indicated that two to four of the hardships occurred are classified as *food insecure with no hunger evident*, meaning that at times "they were uncertain of having, or unable to acquire, enough food to meet basic needs for all household members because they had insufficient money and other resources for food" (Nord et al. 2002) but that they avoided the physical problems of hunger. People who indicated that five or six of the hardships occurred are classified as *food insecure with hunger evident*.

The second summary measure is just the count of affirmative responses to the hardship questions. While counts of hardships are commonly used in well-being research and are examined in our report mostly for comparative purposes, we need to be mindful of their potential drawbacks. For one thing, a raw count of affirmative responses may not take account of the different severities of different conditions. A household whose only affirmative response is to question Q6, may experience a different level of hardship than a household whose only affirmative response is to question Q1. This specific pattern of response is very rare, but it can occur. Another issue with the count measure involves the interpretation of the implied scale. The difference between no affirmative responses and one affirmative response may mean

something different than the difference between one response and two or between five responses and six. By comparing results from the individual food hardship items, the food security scale, and the simple count measure, we can see whether our estimated relationships are sensitive to these measurement and scaling issues.

In the survey, 50 percent of the leaver families who were still off food stamps one year later were food secure; 37 percent were food insecure without hunger evident, and 13 were food insecure with hunger evident. Nationally, in 2000, 84 percent of all households with children were estimated to be food secure, 12 percent were food insecure without hunger evident, 4 percent were food insecure with hunger evident (Nord et al. 2002). Nationally, among households with incomes less that 130 percent of the poverty line, 31 percent were food insecure without hunger evident and 11 percent were food insecure with hunger evident (Nord et al. 2002).

Other adverse events. In addition to the food security questions, families who were not receiving food stamps at the time of the survey were asked whether they experienced any of 14 other adverse events. Some of the events were not applicable to all families, because they focused on problems specific to younger children (problems arranging child care) or specific to older children (children's run-ins with police). Two other events occurred rarely. One of these (going to a homeless shelter) could be logically combined with another category (having to move; see condition A1 below). Another event (sending children to live with someone else) could not be combined with another category and was dropped. The events that we consider are:

A1: Did you ever have to move because you could not pay for housing? Or did you have to go to a homeless shelter? (Combines two items)

A2: Have you ever gotten behind in rent or other payments for housing?

A3: Did you ever get behind on a utility bill?

A4: Did you ever go without electricity in your home?

A5: Did you ever go without heat in your home?

A6: Did your water ever get cut off?

A7: Was your telephone ever cut off?

A8: Did a car or truck ever get taken away because you could not keep up with payments?

A9: Was somebody in your home ever sick or hurt when you couldn't get medical care?

The survey first asked whether each of the adverse events occurred and then asked whether they occurred during the previous 12 months. As we did with the food security items, we created a dummy variable for each condition and set it equal to one if the person reported experiencing the event in the last year. In our multivariate analyses, the nine individual indicators are examined together using a MIMIC specification.

Figure 1. Definitions of Household Food Insecurity from 6-item Scale

Food insecurity category	Definition	Affirmative responses to Q1-6
food secure	During the last 12 months, the household had access at all times to enough food for an active, healthy life.	0-1
food insecure with no hunger evident	During the last 12 months, the household was uncertain of having, or was unable to acquire, enough food to meet basic needs for all its members because they had insufficient money and other resources for food. However, the members did not experience reduced food intakes.	2-4
food insecure with hunger evident	During the last 12 months, the household was uncertain of having, or was unable to acquire, enough food to meet basic needs for all its members because they had insufficient money and other resources for food. One or more members experienced reduced food intakes.	5-6

We also used the indicators of adverse events to construct two summary measures: a binary indicator for whether any of the events occurred and a count variable of the number of different types of events that occurred. From the survey, 31 percent of families reported experiencing none of the adverse events listed above; 23 percent reported experiencing one of the events; 19 percent reported experiencing two events; 13 percent reported experiencing three events, and 14 percent reported experiencing four or more events.

Changes in subjective assessments of well-being. Families who were off the Food Stamp Program were also asked three questions regarding how their personal assessments and concerns about themselves and their families had changed over the previous year. Specifically, people were asked whether they agreed or disagreed with the following statements:

S1: You feel better about yourself now than you felt about yourself a year ago.

S2: You worry more about your family now than you did a year ago.

S3: You feel more stress now than you did a year ago.

We used the responses to these questions to form binary indicators of adopting more negative assessments (disagreeing with statement S1 and agreeing with statements S2 and S3). From the survey, 14 percent of the respondents indicated that they felt worse about things compared to a year earlier, 54 percent indicated that they worried more about their families, and 47 percent reported that they felt more stress. We do not form a summary measure of the changes in subjective assessments.

Other measures. Along with the material and subjective well-being measures, the survey collected information on economic and demographic characteristics of the families. Families were asked to report their total monthly income from all sources except TANF and food stamps. Categorical responses were recorded for $0, $1-499, $500-999, $1,000-1,499, $1,500-1,999, and $2,000 or more; a separate category was set aside for the 48 families who either did not know or refused to divulge their incomes.

The survey also asked people whether they were currently working for pay. If the respondents were not working, they were asked whether they had worked in the last year. The respondents were also asked about their age, race, gender and education. They were also asked about the number of preschool-age children, school-age children, and adults (other than their spouses or partners) living with them.

The original sampling frame for the survey was drawn from caseload management records maintained by the SC DSS. Case identifiers were used to link the survey responses to administrative data from the SC DSS on the family's food stamp use. After some analysis of different program history measures, we settled on two: an indicator for the proportion of days during the 12 months immediately preceding the interview that the family received food stamps and an indicator for the proportion of days during the 12 months before that (13-24 months before the interview) that the family received food stamps. The first measure indicates whether and how long the family received food stamps after initially leaving the program; the second measure indicates how much they relied on the program during the year of their initial spell.

With the case identifiers in the data, we were also able to link the survey responses to earnings records from South Carolina's Unemployment Insurance (UI) system. As with the food stamp program history measures, we created two UI earnings history measures: one variable for the total earnings in the four quarters immediately preceding the interview and another variable for the total earnings in the four quarters before that. In some analyses, we also examine UI earnings in the quarter immediately preceding the interview and earnings in the three quarters before that. Although the UI records are useful for describing people's employment and earnings histories, it is important to recognize their limitations. The records only describe jobs covered by the UI system. As such, they miss some types of public and agricultural employment as well as some self-employment and informal employment. In addition, the records only describe employment that occurs in the state of South Carolina and thus miss work that occurs in other states.

Table 1 lists the means of the measures that are used in our empirical analyses. The estimates indicate that, on average, the families in our study are disadvantaged. As mentioned, half of the families reported being food insecure, and more than two-thirds reported experiencing at least one other adverse event. The survey respondents were mostly female; just over half were black, and nearly a quarter had not completed high school. The average reported monthly income was between $500 and $1,000, and the average amount of UI earnings in the previous year was just over $8,000. Despite the disadvantages that they faced, the families had spent only 7 percent of the preceding year (just under one month), on average, back on food stamps.[2]

Data quality. The availability of the UI earnings data allows us to check the quality of the income and work data from the survey. Results from these comparisons are shown in Appendix A. The general associations between the survey and administrative measures are in the directions that we would expect—the amount of UI-covered earnings is positively associated with reported income, and the incidence of UI-covered employment is positively associated with work status. When we look more closely at specific results, however, there appear to be some reporting inconsistencies. Average UI earnings do not increase consistently (monotonically) with reported income. For example, people who reported not receiving any monthly income had higher UI earnings, on average, than people who reported receiving $1 - $499 in income. Similarly, people who reported receiving $1,500 - $1,999 in income had higher UI earnings than people who reported receiving $2,000 or more in income.

Discrepancies also appear for the work status measure. Over a quarter of the people who reported not working at all in the previous year had UI earnings—18 percent in the previous quarter and 9 percent in the preceding three quarters. The comparison of survey and administration data indicates that the responses from the survey need to be interpreted cautiously.

[2] This low rate of recidivism and program use is partly an artifact of omitting families who were receiving food stamps at the time of the survey.

Table 1. Variable Means – Analysis Sample

Measure		Mean
Food hardships		
Food did not last; could not get more	(Q1)	0.60
Could not afford to eat balanced meals	(Q2)	0.45
Cut the size of meals or skipped meals	(Q3)	0.27
Cut the size of meals or skipped meals *often*	(Q4)	0.21
Ate less than person should have	(Q5)	0.26
Ever hungry but did not eat	(Q6)	0.09
Food insecure (2 or more hardships)		0.50
Food insecure with hunger evident (5 or 6 hardships)		0.13
Count of food hardships		1.89
Other adverse events		
Had to move or go to a homeless shelter	(A1)	0.10
Fell behind in rent	(A2)	0.40
Fell behind in utilities	(A3)	0.47
Went without electricity	(A4)	0.10
Went without heat	(A5)	0.07
Water cut off	(A6)	0.07
Telephone cut off	(A7)	0.31
Car/truck taken away	(A8)	0.09
Could not get medical care	(A9)	0.11
Any adverse events		0.69
Count of adverse events		1.72
Changes in subjective assessments of well-being		
Feel worse about self	(S1)	0.14
Worry more about family	(S2)	0.54
Feel more stress	(S3)	0.47
Explanatory variables		
Age		32.17
Male		0.12
Black		0.55
Completed high school		0.74
Second year of survey		0.48
Number of preschool-age children		0.47
Number of school-age children		1.53
Number of other adults		0.26
Two-parent household		0.53
Total monthly income (0-5; missing = 0)		2.57
Income missing		0.08

Currently working	0.69
Not currently working, but worked in last year	0.13
UI earnings in last year (/$1000)	8.32
UI earnings 13-24 months ago (/$1000)	6.38
Food stamp participation in last year	0.07
Food stamp participation 13-24 months ago	0.66
Number of observations	646

Note: Statistics calculated from survey of former food stamp families in South Carolina (Richardson et al. 2003).